

# Syllabus

## Physics 104-Basic Physics Laboratory

**Catalog Description:** Phys 104. Basic Physics Laboratory. 1-0-3. Laboratory experiments in electricity, magnetism, and light.

**Prerequisite:** Credit or registration in PHYS 102.

**Required Text:** “Selected Experiments in Physics” by NSU Physics Staff. This text is available for purchase at Big Worm Books on Audubon Avenue behind Flannagan’s Restaurant.

### **Student Outcome Objectives:**

- The student will explore and encounter physical examples of the topics mastered in Basic Physics, PHYS 102.
- The student will become proficient in laboratory procedures, which include attention to safety, observations, and documentation.

### **Course Content:**

#### **Outline of Topics**

Experiments #1: Electric Fields

- 2: Joule’s Law
- 3: Ohm’s Law
- 4: Resistors in Series and Parallel
- 5: Ammeters and Voltmeters (labeled VI in manual)
- 6: Wheatstone Bridge (VII)
- 7: Tangent Galvanometer (VIII)
- 8: Electromagnetic Induction (IX) (Midterm Quiz)
- 9: Laws of Reflection and Refraction (X)
- 10: Thin Lenses (XI)
- 11: Optical Instruments (XII)
- 12: TBA
- 13: Lab Final

### **Assessment & Grading:**

The student can earn up to 520 points. The letter grades are assigned in usual fashion: A (>90%), B (80-89%), C (70-79%), D (60-69%), and F (<60%). The points are assigned in these areas:

- Lab performance and participation (120 pts): The student will receive up to 10 points for conducting each experiment. This component of the assessment includes cooperation with other group members and participation in the experiment.
- Data and Analysis (240 pts): The student will earn up to 20 points, during each lab, for the data and analysis. These will include tables of data, calculations, and, when applicable, graphs or drawings.
- Lab Reports (60 pts): The student will earn up to five points for each lab report. The lab report should be no greater than one type-written page (12 pt font, double-spaced). This report will be a simple summary of the experiment and results; it will serve as an abstract, not a full lab report. The student will submit these reports through Black Board’s digital drop box. See document on BB for more details about format.
- Midterm Quiz (35 pts): The midterm will contain only a written component.
- Final Exam (70 pts): The final will be cumulative and consist of written and practical components.